Floo

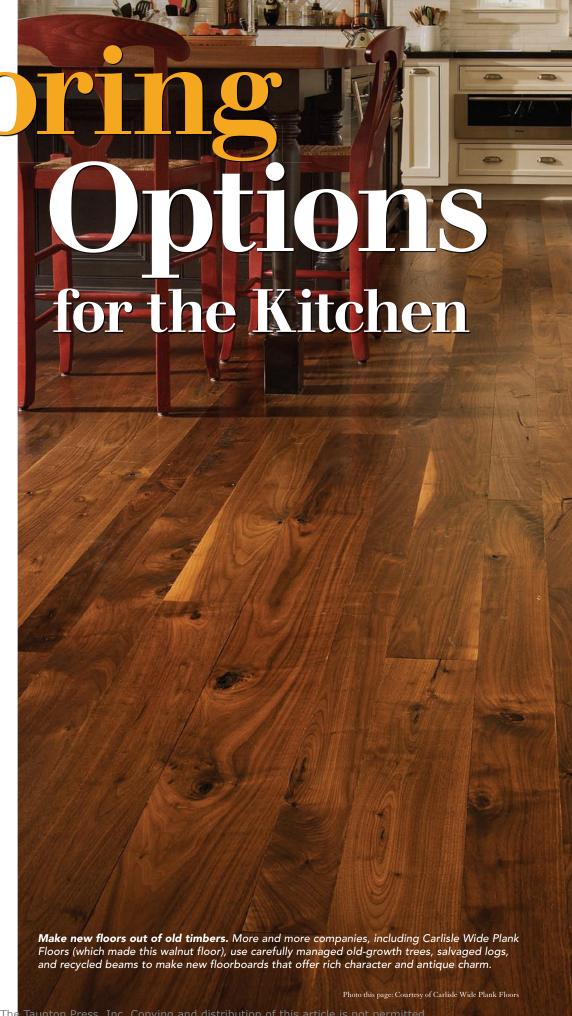
From concrete to cork, here are the facts you need to make the right choice

BY MATTHEW TEAGUE

s the most highly trafficked space in the house, a kitchen's floor has to withstand everything from spills to stilettos. The kitchen is the social heart of the home, playing host to dinner-party guests, friends, and family on a regular basis. The floor needs to look good, be comfortable to walk on, and wear well over time.

Sorting through the array of flooring materials can be a downright dizzying process, and finding the right balance between style and function is often the most difficult task. Each type of flooring has strengths and weaknesses, which greatly affect how it'll live in your kitchen. Whether you're looking for the charm of hand-scraped hardwood, the comfort of cork, the durability of concrete, or the "greenness" of palm, I'll pinpoint the benefits of each product, highlight its flaws, and attach a price tag to it. Before you dive in, remember: No single type of flooring material is best. The right kitchen-flooring choice is a reflection of your overall taste, the needs of your home, and your budget.

Matthew Teague is a contributing writer for *Fine Homebuilding*. He lives in Nashville, Tenn.



OOD MAINTAINS A TRADITION OF DURABILITY AND COMFORT

Aside from rock and dirt, wood floors probably have the longest history of any flooring type. While traditional, unfinished solid-plank flooring continues to be installed in kitchens across the country, there are two other wood-floor options available that just might outperform it. Engineered and prefinished wood flooring can be installed more quickly than unfinished solid-wood boards without abandoning their look, comfort, or durability. A wood floor's longevity, however, is largely dependent on the way it is finished and maintained. For years, oilbased urethanes were the finish of choice, but modern water-based finishes are just as durable and can be applied faster and with less odor. Sweeping regularly helps to prevent dirt from wearing away the finish.

Solid wood

wood flooring Solid-oak floors have made up the bulk of the wood-flooring industry for years, but that doesn't mean that wood floors have limited style. Solid-wood flooring can be made out of everything from ash to zebrawood and milled to most any width you'd like. In the kitchen, hardwoods perform best. Although softwoods like pine look good and are readily available, they're not as tough as hardwood species and wear quickly under heavy use. Some hardwoods are harder than others, but all are rugged enough to handle everyday abuse in a kitchen. Solid hardwoods will last as long as your house, and they're also comfortable underfoot. Wood flexes just enough to ease the tension on your feet, legs, and back.

If your tastes lean toward traditional hardwood and you're in the market for an environmentally friendly floor, take a look at flooring made from recycled lumber or from the old-growth timbers now being hauled up from some lake bottoms.

Engineered wood

Engineered floorboards are more dimensionally stable than solid-wood flooring, meaning they're less likely to expand or contract due to humidity fluctuations. This stability makes them a great choice for flooring installed over a radiant-heating system. They're also just as comfortable as solid wood. The floorboards are made of multiple layers of wood stacked in a cross-grain pattern and glued up under pressure, much like plywood. The top layer features a veneer of the best-looking wood, while the layers underneath can be made of less expensive wood.

Engineered wood floors usually come prefinished. Manufacturers claim that their applied finishes are much more durable than any finish that can be applied on site. That said, kitchen activity can be ruthless, and even the most durable wood floors may need to be refinished at some point. Although some manufacturers boast that you can sand an engineered wood floor to refinish it, the top layer of wood is only 1/16 in. to 1/8 in. thick, making it difficult to sand without exposing the layers underneath.

SIMILARITIES GO ONLY SO DEEP

Solid-wood

flooring

Engineered

Solid-wood flooring's thickness allows it to be refinished time and again over its life span. Engineered flooring's thin top layer of wood is only 1/16 in. to 1/8 in. deep, making it difficult to refinish without causing damage to the veneer. Both types of flooring can be ordered prefinished, eliminating the on-site finishing process while providing a finish of higher quality in terms of durability.

PROS

CONS

tions with engi-

neered flooring.

Easy on your feet; warm Can be expenunderfoot; sive; suscepdurable; wide tible to water range of spedamage; softer cies, stains, species dent and prices; easily; refinishing solid wood can is an involved be refinished process; solid multiple times; wood expands/ engineered contracts with wood installs humidity; prefinquickly; preished floors offer finished floors limited stain can be used options; limited immediately. refinishing op-

COST

Solid wood: \$2-\$10 per sq. ft. Engineered: \$3-\$12 per sq. ft. Recycled: \$3-\$25 per sq. ft. *Costs reflect materials only.

SOURCES

Advantage Trim & Lumber www.advantagelumber.com

Aaed Woods www.agedwoods.com

BHK of America www.bhkmoderna.com

Bruce Hardwood Flooring www.bruce.com

Carlisle Wide Plank Floors www.wideplankflooring.com

Goodwin Lumber www.heartpine.com

Heartwood Pine www.heartwoodpine.com

Mountain Lumber Co. www.mountainlumber.com

PermaGrain Inc. www.permagrain.com

www.tarkett-floors.com

What It's Worth www.wiwpine.com

www.finehomebuilding.com

HARDWOOD FLOORING THE EASY WAY

Some engineered floors, like these made by Bruce Hardwood Flooring, come prefinished and are installed simply by locking each board together with a specially designed tongue-and-groove joint.







LAMINATE PERFORMS AND LOOKS BETTER THAN YOU THINK

As much as some laminate flooring looks like solid wood, it is anything but. Laminate flooring is composed of four different layers of material and can be made to look like anything from marble to distressed oak. The top layer of a laminate board, called the wear layer, is usually a clear resin-based melamine that is incredibly durable and scratch resistant. Beneath the wear layer is a photo layer, which is a paper image of the specific material that you see on the face of the board. These layers are bound to a core made of high-density fiberboard (HDF) and a backing, usually made of melamine, that lends stability and moisture resistance. Because of

the relatively inexpensive materials

that go into laminate flooring, it

is one of the most economical options available.

One of the major benefits of laminate flooring is the speed with which it can be installed. Laminate floors are floating, meaning they don't need to be fastened to a subfloor.

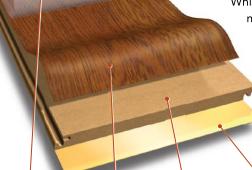
While laminate floors of old had to be glued together, most new laminates snap together using an inter-

locking tongue-and-groove arrangement. This joint not only makes installation quick and easy, but it

also pulls the boards tightly together, which helps to prevent liquids from penetrating the seams, a nice quality in a kitchen floor.

> While the durability of laminate has always been high, the flooring tended to look fake. Newer laminate floor-

> > ing is more convincing than ever. In addition to laminate's durability and low cost, the product offers plenty of deflection, making it comfortable underfoot. Caring for a laminate floor is easy and requires only occasional damp-mopping.



Wear layer A hardwearing film gives laminate flooring its durability.

Photo layer The photographic image allows laminate to mimic anything from marble to exotic hardwood.

Known as the carrier board, this piece of high-density fiberboard is considered the backbone of each plank.

Backing Usually made of melamine, this sheet provides extra moisture resistance to

the bottom of

each board.

Much more than a reproduction of wood. Laminate comes in a number of shapes, colors, and textures to fit whatever aesthetic theme your kitchen may have. These tiles are made

by ABET Inc.



Durable; easy on your feet; low maintenance; can be installed over old flooring; quiet; easy installation; low to moderate cost; scratch resistant; damaged planks can be re-

placed; built-in

vapor barrier

reduces mois-

ture absorption.

CONS

Cannot be refinished; some are expensive; limited style choices; not hypoallergenic; wet environments may cause fiberboard core to swell.

COST

\$3-\$8 per sq. ft. *Costs reflect materials only.

SOURCES

ABET Inc. www.abetlaminati.com

BHK of America www.bhkmoderna.com

Formica www.formica.com

Lumber Liquidators www.lumberliquidators.com

Mannington www.mannington.com

www.pergo.com

Quick-Step www.quick-step.com







Not the laminate you remember. Thanks to advanced manufacturing processes at companies like Mannington and Quick-Step, laminate can be adorned with qualities found only on true wood floors.

LINOLEUM IS LOW IMPACT AND BIODEGRADABLE

After falling out of vogue when vinyl became the kitchen floor of choice in the 1960s, linoleum has undergone a revival in recent years due to its standing as an environmentally friendly flooring option. Linoleum takes less energy to manufacture than most flooring, and it is made primarily from natural materials: linseed oil, wood flour, limestone, tree resins, and natural jute. Linoleum also can be installed using a solvent-free adhesive. When made of all-natural products, linoleum is 100% biodegradable and has no VOC emissions. Forbo, the company that introduced Marmoleum, even recycles all of its post-production waste.

Available in sheets and tiles of varying sizes and in more than 150 colors and patterns, Forbo's Marmoleum and Armstrong's Marmorette are highly versatile from a design standpoint. Linoleum also wears well and actually gets better with age: Exposure to air causes linoleum to harden, but it remains resilient, comfortable, and quiet underfoot. It's also hypoallergenic.

SOURCES

Armstrong World Industries www.armstrong.com

Forbo Flooring Systems www.themarmoleumstore.com



VINYL IS LOW MAINTENANCE

ranging from 6 ft. to 12 ft., while vinyl tiles are usually sold in 12-in. squares. Vinyl even comes in plank form to mimic hardwood. Each type is available in an almost endless array of colors and designs. Vinyl is generally composed of four layers. A clear wear coat,

usually made of urethane, helps to prevent scratches and eases cleanup. A layer of clear vinyl provides durability. The printed layer, similar to laminate flooring, creates the look of the floor, while a backing of either felt or fiberglass adds rigidity. Vinyl with a felt backing must be glued to a subfloor. Fiberglass-backed floors are more comfortable and generally don't require any adhesive since they are far less likely to curl up at the edges.

Vinyl has been vastly improved—in both design and quality—since

its no-wax heyday in the 1960s. Sheet vinyl is available in widths

Some manufacturers produce inlaid vinyl flooring in which granules of color are embedded to lend a richer appearance. Inlaid patterns wear better than vinyl with only a printed photographic image, but they typically cost a bit more. Many manufacturers also add texture to create a more realistic, 3-D effect that closely mimics the surfaces they intend to replicate.

PROS

durable; inexpensive; easy on your feet; quiet; low maintenance; vater resistant; wide sheets hide seams in small rooms; easy to install; wide variety available; easy

Resilient;

CONS

Seams visible in wide rooms; seams susceptible to water damage; gloss finishes are slippery when wet; can fade or yellow; pattern can wear off; seams may lift.

COST

maintenance.

\$2–\$5 per sq. ft.
*Costs reflect materials only.

www.finehomebuilding.com

Armstrong World Indi

www.armstrong.com Congoleum

SOURCES

Photo top right: Courtesy of Forbo Flooring. Top left: Rodney Diaz. Bottom: Courtesy of Armstrong.

TILE AND STONE ARE AT HOME IN

Tile is often the first material that comes to mind when people think of a kitchen floor, and it has probably been that way for a while. Archaeologists have discovered thin slabs of fired clay dating back to about 4700 B.C. Today's tile isn't much different. Modern tile consists of clay and minerals that are shaped, pressed, and fired at high temperatures to create a hard surface. Tile is available in a variety of colors and shapes, and in sizes that range from 1-in. circles to 6-in. arabesques to 2-ft. squares. With so many options, the patterns possible with tile approach infinite.

Ceramic tiles are available in nonporcelain and porcelain versions. The current market, however, is seeing a surge in the use of porcelain in the kitchen. Porcelain tiles are made from ingredients similar to those found in fine dinnerware and are fired at higher temperatures than nonporcelain tiles. The end product is incredibly dense, with a water-absorption rate that's much lower than nonporcelain tile, which makes it frost resistant and an excellent choice for indoor or outdoor kitchens. Porcelain is also homogenous throughout, meaning that if you drop a cast-iron pan and chip the tile, the material below is the same color as the surface. Nonporcelain tiles achieve their color from

an applied glaze, and damage is more noticeable.

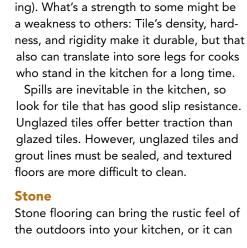
When shopping for tile,



Limestone







Stone flooring can bring the rustic feel of the outdoors into your kitchen, or it can

remember that all tiles can be used on

floors. Floor tiles must be rated as such,

and for durability, kitchen tiles must be

at least a category III (out of a I to IV rat-

walls, but not all tiles can be used on



Stone doesn't have to be so rugged. Stone can be cut into smooth, uniform tiles to create a more reserved yet equally durable kitchen floor.



Tried-and-true. Beyond its durability and ease of maintenance, tile offers the largest variety of colors, shapes, and sizes, which makes a one-of-a-kind kitchen much more attainable.

be configured in sleek, uniform, tilelike orientations to create a more refinedlooking floor. Uniform layouts demand precut stones, which increase costs substantially. For more money, stones can be cut into specific shapes to fit into the layout of your choosing.

Except for soapstone, all stone should be sealed to increase its stain resistance. To care for a stone floor, you'll need either a damp mop or a stone cleaner; consult your stone or floor specialist to determine the best cleaning practices for the type of stone you install. As with tile, the grout between stones must be sealed occasionally; the frequency varies from one type of grout to another.

One-of-a-kind designs are possible with stone floors. There are numerous types of stone to choose from: marble, granite, limestone, soapstone, travertine, and flagstone among them. An excellent conductor of heat, stone flooring works well with radiant-floor heating systems. Although some stone wears better than others, the average stone floor is incredibly durable. However, with this durability comes hardness, which can be unforgiving to your feet and to dropped dishware.

Travertine

PROS

Countless sizes, shapes, and colors; low maintenance; can be stain resistant; colors won't fade; works well with radiant-floor heat; can create very natural look (stone); inexpensive (some tile).

CONS -



Cold underfoot: susceptible to cracking or chipping; grout may stain or crack: grout requires maintenance; gloss finishes can be slippery when wet; hard on your feet; noisy; dropped items likely to break; must be sealed regularly (stone); can be very expensive.

COST

Ceramic tile: \$1-\$12 per sq. ft. Stone: \$4-\$18 per sq. ft. *Costs reflect materials only.

SOURCES

Ceramic Tiles of Italy www.italytile.com

Crossville Inc. www.crossvilleinc.com

Dal-Tile Corp. www.daltile.com

Green Mountain Soapstone Corp. www.greenmountainsoapstone.com

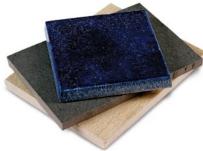
Marble Granite Depot www.marblegranitedepot.com

The Mosaic Tile Co. www.mosaictileco.com

Tile Council of North America www.tileusa.com

Tile of Spain Center www.tilespain.com

*For stone tile, look for tile dealers rather than stone dealers.



Consistency is key. Most porcelain tile maintains the same color throughout its depth, so damage to the surface won't be so apparent.

Fringe flooring

Concrete, brick, and stainless steel are less likely residential-flooring options, but they perform exceptionally well when placed in the kitchen, where durable, stylish materials are a must.

Concrete _

Concrete can be stamped to simulate a tile, brick, or stone floor; finished in a variety of textures; and stained an almost endless spectrum of colors. Concrete can even be made into tiles.

Although concrete can be cold underfoot, it works well

in conjunction with radiant-floor heat, it is easy to maintain, and it is arguably the most durable flooring material you can place in the kitchen. On the downside, concrete is extremely hard and does not deflect whatsoever when walked on or when a glass is dropped on it. It's also susceptible to staining if not sealed properly. Concrete is a lowcost product, but prices can soar when a professional finisher is called in to tackle the job.



Brick

Forgotten for many years and likely inspired by the urban-chic look of factories converted for loft living, the charm of brick flooring is once again popular. More often than not, today's clay-brick floors are composed of brick veneers ranging in thickness from ½ in. to 15/16 in. New veneers offer a smooth, consistent look, while veneers made from old reclaimed bricks tend to have a bit more character. Both types are installed just like unglazed ceramic tile. The slip resistance of brick and its durability make it a great choice for the kitchen. However, like natural stone, brick can be unforgiving on your feet, dishware, and wallet.

Stainless steel

There's nothing subtle about a stainless-steel floor, but if it's a clean, modern look you're after, it might be the best option. These metal tiles, which come as large as 24 in. by 24 in., are screwed in place over a thin rubber underlayment. There is no

need for adhesive, and the installation is quick and dust free. While smooth steel can be slippery when wet, metal flooring is often embossed to increase slip resistance and add style. Stainless steel may be durable, but at roughly \$35 per sq. ft., it's very expensive.

SOURCES CONCRETE

Concrete Network, www.concretenetwork.com Concrete Tile Manufacturers Association www.concretetile.hypermart.net

Sonoma Cast Stone, www.sonomastone.com

Brick Veneer Inc., www.thin-brick-veneer.com Vintage Brick Salvage, www.bricksalvage.com

STAINLESS STEEL

Planium, www.planium.it

Woodford Stainless, www.woodfordstainless.com

*Contact tile dealers to find concrete tile



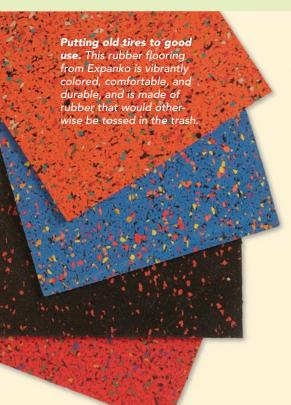
GREEN FLOORING MAKES GOOD USE OF UNLIKELY MATERIALS

CORK

Cork is harvested from live cork oak trees without cutting down the actual tree or corrupting the habitat in which it grows. The cork, which is similar to the outer layer of bark on a tree, regrows and is ready to harvest every 9 to 14 years. Multiple manufacturers now offer both unfinished and prefinished cork flooring in both tiles and glueless tongue-and-groove planks. Warm and comfortable to walk on, cork floors are also resilient. The flooring compresses underfoot, or under the impact of a dropped plate, and rebounds to its full volume. This resilience does have limits: If large appliances or furniture sits in the same spot for long lengths of time, the underlying cork can become permanently deformed.

Cork contains elements that repel bugs, mold, and mildew, so it's considered hypoallergenic. It also acts as an insulator to reduce noise transmission between rooms. You can buy cork floors that are natural in color or stained a variety of shades. You can even find cork floors with swirl patterns reminiscent of burlwood.





RUBBER

Designed to withstand the trials of commercial kitchens, machine shops, and automotive centers, rubber flooring has no trouble standing up to the rigors of a residential kitchen. Available in a variety of colors and patterns, rubber floors don't have to look as industrial as you might think. The various raised patterns on rubber floors are designed to improve traction, but they also lend a decorative, contemporary look to a kitchen. Rubber flooring is available in both sheets and tiles and is generally installed with a solvent-free adhesive. While a few rubber floors are marketed for residential use, you also might consider buying a commercial rubber floor through a flooring dealer.

If you're looking for the performance traits of rubber in an environmentally responsible product, look to the manufacturer Expanko and its residential product, Reztec. This flooring is made of a combination of postindustrial-waste rubber, virgin rubber, and recycled tires. Reztec is available in 48-in.-wide rolls and three different tile sizes.

PROS

Comfortable underfoot; contemporary look; durable; easy maintenance; can be custom colored; resilient.

CONS -

Can be difficult to find: few experienced installers; expensive; some products can be damaged by

COST

\$4-\$20 per sq. ft. *Costs reflect materials only.

SOURCES

Expanko www.expanko.com Quality Flooring 4 Less www.qualityflooring4less.com



Which is the most durable? All bamboo is tough enough for the kitchen, but endgrain and strand-woven bamboo are the hardest.



A broad color palette. Bamboo is difficult to stain evenly, but factory-applied colorants give this flooring an even, enriched look.

BAMBOO

As hard as maple and as durable as oak, bamboo is marketed as an environmentally friendly choice. Although the term *sustainable* has different meanings to different people, it's difficult to argue against the sustainability of bamboo. *Tonkin* and *moso*—the species of bamboo used to manufacture most flooring—grow to full height in about six months and naturally replenish themselves once harvested. A lot of manufacturers, however, allow bamboo to continue growing for four to six years. This late growth lends significant strength to the bamboo. Most of today's bamboo is harvested in Asia and South America, but a number of manufacturers are experimenting with bamboo stands in some Southern states.

There are four main styles of bamboo flooring on the market: flat grain, vertical grain, end grain, and strand woven. Each has a different price point, aesthetic, and level of durability. Flat-grain bamboo is considered the most economical because it's the least expensive type of bamboo flooring.

Bamboo is naturally pale yellow but is often put through a heating process, which caramelizes its natural sugars and gives it an amber tone. Bamboo flooring is available in a variety of other colors, too, in order to complement any design theme.

DIMENSIONALLY DIFFERENT

Bamboo flooring can be purchased as a solid product in 5/8-in.-thick tongue-and-groove strips or mounted on an engineered plank. Either type can be finished on site or purchased prefinished.



PROS

Warm underfoot; durable; some give underfoot; available prefinished; available as an easy-to-install engineered product.

CONS

Limited color options; limited products on the market; prefinished planks leave seams unsealed.

COST

\$4–\$8 per sq. ft.
*Costs reflect materials only.

SOURCES

Cali Bamboo www.calibamboo.com Smith & Fong www.plyboo.com Teragren www.teragren.com

www.naturalcork.com

PALM

Palm, a relative newcomer to the flooring market, is made from the hard, dark wood of plantation-grown coconut palm trees that no longer produce coconuts. After about 100 years, coconut palms grow so large that nutrients from the soil no longer reach the nuts, so the trees stop producing and have to be cut down. The lumber, which often went unused, is sliced, dried, and laminated together—much like plywood—using nontoxic adhesives.

Sold in 5%-in.-thick, 72-in.-long tongue-and-groove strips, palm flooring installs much like traditional hardwood flooring. The end product is about 25% harder than red oak, so it performs relatively well in the kitchen. Palm wears and reacts with water in very similar ways to traditional hardwood floors. The finishing and maintenance requirements are similar as well.

Palm flooring is available in both edge-grain or flat-grain orientations and can be purchased unfinished or prefinished with natural, walnut, or ebony stains.

PROS

Warm and comfortable underfoot; durable; available prefinished; made of products that would otherwise go to waste.

CONS -

Limited color options; limited products on the market; prefinished planks leave seams unsealed.

COST.

\$9–\$10 per sq. ft.
*Costs reflect materials only.

SOURCE

Smith & Fong, www.plyboo.com